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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/618,615	07/15/2003	Yasuro Kikuchi	740145-267	5365

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EXAMINER

ZIMMERMAN, GLENN

ART UNIT PAPER NUMBER

2879

DATE MAILED: 12/23/2004

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/618,615

Applicant(s)

KIKUCHI ET AL.

Examiner

Glenn Zimmerman

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-12 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1,3,5,6,9 and 12 is/are rejected.
- 7) ☒ Claim(s) 2,4,7,8,10 and 11 is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 15 July 2003 is/are: a) ☐ accepted or b) ☒ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. ____.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0703.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: ____.

DETAILED ACTION

Drawings

The drawings are objected to as failing to comply with 37 CFR 1.84(p)(5) because they include the following reference character(s) not mentioned in the description: 24, 0, 264 and 4'. Corrected drawing sheets in compliance with 37 CFR 1.121(d), or amendment to the specification to add the reference character(s) in the description in compliance with 37 CFR 1.121(b) are required in reply to the Office action to avoid abandonment of the application. Any amended replacement drawing sheet should include all of the figures appearing on the immediate prior version of the sheet, even if only one figure is being amended. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.84(c)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Figure 1 should be designated by a legend such as --Prior Art-- because only that which is old is illustrated. See MPEP § 608.02(g). Corrected drawings in compliance with 37 CFR 1.121(d) are required in reply to the Office action to avoid abandonment of the application. The replacement sheet(s) should be labeled "Replacement Sheet" in the page header (as per 37 CFR 1.121(d)) so as not to obstruct any portion of the drawing figures. If the changes are not accepted by the examiner, the

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applicant will be notified and informed of any required corrective action in the next Office action. The objection to the drawings will not be held in abeyance.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

Claims 1, 3, 5 and 9 are rejected under 35 U.S.C. 102(b) as being anticipated by White et al. U.S. Patent 3,840,768.

Regarding claim 1, White et al. Disclose a short arc discharge lamp (Fig. 1 ref. 1) which includes a discharge space (Fig. 1 no ref. #) surrounded by an arc tube (ref. 12) and in which, within the arc tube, a first electrode (ref. 13) is positioned at a distance from a second opposed electrode (ref. 14), comprising,

At least one conductive component (ref. 37) having a tip (ref. 36 or ref. 37 col. 3 line 44) projecting into the discharge space and having an electrical potential which is identical to an electrical potential applied to the first electrode (col. 3 line 24),

Wherein the tip is at a distance from the second electrode which is greater than the distance between the first and the second electrode (Fig. 1).

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The examiner notes that the conductive component 37 is welded to the core wire 20 so therefore the potential of the conductive component and tip will be identical to an electrical potential applied to the first electrode.

Regarding claim 3, White et al. Discloses a short arc discharge lamp as claimed in claim 1, wherein the tip (ref. 36 or 37) of the conductive component is in close proximity to an inside wall of the arc tube (Fig. 1 ref. 12) without contacting the inside wall. The examiner notes that "close" is a relative word.

Regarding claim 5, White et al. Disclose a short arc discharge lamp as claimed in claim 1, wherein the conductive component is connected (col. 3 line 24) to an upholding part (ref. 20) of the first electrode.

Regarding claim 9, White et al. Disclose a short arc discharge lamp as claimed in claim 1, wherein the conductive component has a smaller diameter than a diameter of first or the second electrodes. One can see from Fig. 2 that the reference 37 wire (col. 3 lines 29-30) has a smaller diameter than the ref. 20 wire.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 1 and 6 are rejected under 35 U.S.C. 103(a) as being unpatentable over Geven et al. U.S. Patent 4,935,667 and Mizuno et al. U.S. Patent 3,716,743.

Regarding claim 1, Geven teaches arc discharge lamp (title) which includes a discharge space (Fig. 2 no ref. #) surrounded by an arc tube (ref. 3) and in which, within the arc tube, a first electrode (ref. 20 relative to ref. 6) is positioned at a distance from a second opposed electrode (ref. 20 for ref. 7), comprising,

At least one conductive component (ref. 21) having a tip (ref. 21 tip) projecting into the discharge space and having an electrical potential which is identical to an electrical potential applied to the first electrode (col. 3 lines 1-2)

Where the tip is at a distance from the second electrode which is greater than the distance between the first and the second electrode (Figs. 1 and 2).

, but fails to teach a short arc discharge lamp. Mizuno et al. in the analogous art teaches a short arc discharge lamp (col. 2 line 45). Additionally, Mizuno et al. teaches incorporation of such a short arc discharge lamp i.e. having xenon to improve starting of the lamp (col. 2 line 45).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a short arc discharge lamp in the arc discharge lamp of Geven et al., since such a modification would improve starting of the lamp as taught by Mizuno et al.

The examiner notes that the ref. 21 is a shield made of tungsten wire spiralized which grips around the electrode. If the wire grips the electrode then it will have the

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same potential as the electrode. The examiner notes that Fig. 2 is a representation of both ends.

Regarding claim 6, Geven et al. Disclose the short arc discharge lamp as claimed in claim 1, wherein the conductive component is connected to the first electrode (col. 3 lines 1-2 and Fig. 2 ref. 21, 17).

Claim 12 is rejected under 35 U.S.C. 103(a) as being unpatentable over White et al. U.S. Patent 3,840,768 in view of Scholtz et al. U.S. Patent 6,147,440.

Regarding claim 12, White et al. Teaches a short arc discharge lamp (Fig. 1 ref. 1) which includes a discharge space (Fig. 1 no ref. #) surrounded by an arc tube (ref. 12) and in which, within the arc tube, a first electrode (ref. 13) is positioned at a distance from a second opposed electrode (ref. 14), at least one conductive component (ref. 37) having a tip (ref. 36 or ref. 37 col. 3 line 44) projecting into the discharge space and having an electrical potential which is identical to an electrical potential applied to the first electrode (col. 3 line 24), the tip is at a distance from the second electrode which is greater than the distance between the first and the second electrode (Fig. 1), but fails to teach a concave reflector having a neck portion; and wherein a hermetically sealed portion of the short arc discharge lamp is located in the neck portion of the concave reflector. Scholtz et al. in the analogous art teaches a concave reflector (Fig. 1 ref. 14) having a neck portion (ref. 20); and wherein a hermetically sealed portion of the short arc discharge lamp is located in the neck portion of the concave reflector (Fig. 2 no ref. # Fig. 1 no ref. #). Additionally, Scholtz et al. teaches incorporation of such a a concave reflector having a neck portion; and wherein a hermetically sealed portion of the short

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arc discharge lamp is located in the neck portion of the concave reflector to improve arc discharge reflector lamps (col. 2 lines 15-16) and the assembly is rugged (col. 2 line 16).

Consequently it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use a concave reflector having a neck portion; and wherein a hermetically sealed portion of the short arc discharge lamp is located in the neck portion of the concave reflector in the lamp of White et al., since such a modification would improve arc discharge reflector lamps and the assembly is rugged as taught by Scholtz et al.

Allowable Subject Matter

Claims 2, 4, 7, 8, 10 and 11 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

Regarding claim 2, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a short arc discharge lamp including the combination of all the limitations as set forth in claim 2, and specifically wherein the tip of the conductive component is in contact with the inside wall of the arc tube could not be found elsewhere in prior art.

Regarding claim 4, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a short arc discharge lamp including the combination of all the limitations as set forth in claim 4, and specifically wherein the conductive component is located outside the area which is at an effective light utilization angle extending from the arc middle rotating around the electrode axis could not be found elsewhere in prior art.

Regarding claim 7, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a short arc discharge lamp including the combination of all the limitations as set forth in claim 7, and specifically wherein the conductive component is connected to a molybdenum foil which is electrically connected to an upholding part of the first electrode could not be found elsewhere in prior art.

Regarding claim 8, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a short arc discharge lamp including the combination of all the limitations as set forth in claim 8, and specifically wherein the conductive component is connected to an outer lead which is connected electrically conductively to the first electrode could not be found elsewhere in prior art.

Regarding claim 10, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a short arc discharge lamp including the combination of all the limitations as set forth in claim 10, and specifically wherein the tip of the conductive component has a tip angle which is smaller

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than an angle of a cone-like area of a tip of the first electrode could not be found elsewhere in prior art.

Regarding claim 11, the following is an examiner's statement of reasons for allowance: The prior art of record neither shows nor suggests a short arc discharge lamp including the combination of all the limitations as set forth in claim 11, and specifically wherein and at least the area of the tip of the conductive component contains material selected from the group consisting of at least one of the metals Th, La, Ce, Hf and Ba could not be found elsewhere in prior art.

Conclusion

The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Ono et al. U.S. Patent Application Publication 2001/0038267 disclose a High-Pressure Discharge Lamp, and Manufacturing Method, Lighting Method and Lighting Device for the Same. Dobashi et al. U.S. Patent 5,256,935 discloses a Low Pressure Mercury Vapor Discharge Lamp Having Cold Cathode. Nieda U.S. Patent 5,278,474 disclose a Discharge Tube. Pirani et al. U.S. Patent 2,087,735 discloses a Gaseous Electric Discharge Lamp Device. Shaffner et al. U.S. Patent 3,995,928 disclose High Pressure Metal Halide Lamp with Electron Collector.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Glenn Zimmerman whose telephone number is (571) 272-2466. The examiner can normally be reached on M-W 8-5.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nimesh D Patel can be reached on (571) 272-2457. The fax phone number for the organization where this application or proceeding is assigned is 703-872-9306.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


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